



## Appendix D

# UXO Avoidance Report

General

## **MEC AVOIDANCE REPORT**

The objective of this Munitions and Explosives of Concern (MEC) Avoidance Report is to discuss the MEC services which MKM provided for the RVAAP 14 AOC project at the RVAAP. The MEC avoidance tasks outlined in this report were required, and were implemented, due to the potential for site personnel and equipment to encounter hazardous MEC during the performance of environmental sampling tasks that were conducted by MKM. The MEC avoidance tasks were performed in accordance with all applicable Federal, state and local regulations, and any work or safety plans that were implemented by MKM.

## **GENERAL**

MKM Engineers, Inc. (MKM) provided a MEC avoidance team (minimum Tech II) to provide on-site MEC avoidance support during intrusive sampling or work activities at the RVAAP 14 AOC sites. This report details the MEC avoidance operations conducted by MKM personnel, MKM subcontractors and site visitors.

## **MEC TEAM COMPOSITION**

The MEC Team consisted of two MEC technicians during MEC avoidance activities that required the clearance of work areas. For intrusive sampling or work activities, only one MEC technician was required to provide down-hole magnetometer support.

## **GENERAL PROJECT DESCRIPTION**

MKM conducted MEC avoidance at the RVAAP 14 AOCs. Due to the potential for encountering MEC, MKM was tasked with the following responsibilities:

1. Providing MEC recognition and avoidance training for non-UXO qualified personnel.
2. Providing escort to MKM personnel, subcontractors and equipment during the conduct of intrusive sampling activities.
3. Determining the location of anomaly-free locations for soil boring.

## **MEC FIELD INVESTIGATION EQUIPMENT**

To conduct the MEC avoidance services, an UXO-qualified technician utilized a Schonstedt magnetometer to conduct sweeps of work areas and conducted down-hole surveys to detect ferrous anomalies. A response check of the Schonstedts was conducted daily, prior to use, to ensure that the instruments were operating properly. Only properly trained MKM UXO-qualified technicians handled and operated these instruments.

## **UXO SAFETY PRECAUTIONS AND PROCEDURES**

### **GENERAL SAFETY MEASURES**

Operations at the RVAAP 14 AOCs with the potential for encountering MEC were conducted only by appropriately trained, MKM UXO-qualified technicians. Non-UXO qualified personnel were allowed to operate in a MEC area only when escorted and directly observed by a UXO-qualified technician. For the purpose of this MEC avoidance report, a MEC area shall be defined as an area which was not cleared and demarcated by UXO-qualified technician and where the potential exists for encountering MEC. Once an area had been cleared and demarcated as being

anomaly-free, non-UXO personnel were allowed to walk and transport equipment within the demarcated area without direct supervision of the UXO personnel. However, intrusive activities by non-UXO personnel were directly supervised by an UXO technician. The general MEC safety measures listed below were strictly adhered to during the conduct of MEC operations at the RVAAP 14 AOCs.

1. Work areas for all sampling sites were surveyed by MKM UXO-qualified personnel prior to non-UXO qualified personnel accessing the area.
2. Using a magnetometer, MEC avoidance was conducted prior to drilling or augering activities through surface clearance of the point to be penetrated. An anomaly free area was designated for the intrusive activities. Down-hole surveying was conducted at two-foot intervals until undisturbed native soils were encountered or bedrock.
3. Using a magnetometer, MEC avoidance was conducted prior to driving stakes or marker posts into the ground through surface clearance of the point to be penetrated. An anomaly free area was designated for the intrusive activities.
4. Non-UXO qualified personnel did not enter or perform activities in a potential MEC area unless the area was cleared and demarcated by an UXO-qualified technician, or escorted by UXO-qualified personnel in an unclear potential MEC area.
5. Sub-surface magnetometer survey equipment was calibrated and operated in accordance with the manufacturer's requirements and procedures.

## **MEC AVOIDANCE PROCEDURES**

### ***MEC Avoidance for Access Lanes and Work Areas***

Prior to personnel conducting sampling operations, UXO personnel conducted a visual and magnetometer survey of the access lanes to the sampling locations and the work areas adjacent to each location. The access lanes were surveyed to a minimum width of five feet (or twice the width of the widest piece of equipment that was used at the sampling site, as determined by the UXO Supervisor). Each access lane and work area was surveyed using a Schonstedt magnetometer, which allowed for MEC avoidance to an approximate depth of two feet. The procedures listed below were followed during access lane or work area clearances.

1. Surveyed access lanes and work areas were demarcated with surveyors tape.
2. The primary objective of each surface survey was to identify an access lane that accesses the work area as directly as possible without encountering subsurface anomalies, and to identify sampling locations that are also free of anomalies.
3. Subsurface anomalies were marked with pin flags and avoided by project personnel.

### *Clearance of Sampling Sites*

MKM UXO-qualified personnel conducted a MEC clearance of each soil boring site, discrete sample locations and MI sampling grids to ensure that the soil around and under each intrusive site was free of potential MEC. Potential MEC areas were cleared through the use of surface and/or down-hole magnetometry. During the actual sampling and/or boring, only one UXO-qualified technician was required to escort the non-UXO personnel and clear the sampling locations. UXO-qualified personnel were not required to escort sample technicians into pre-cleared areas.

1. The procedure for sample collection within multi-incremental (MI) grids were as follows:
  - Surface clearance through visual inspection;
  - 32 MI sampling points were pre-cleared for MEC using a magnetometer by a UXO-qualified technician to a depth of two feet; and
  - MI samples were collected by MKM sample technicians to a depth of one foot bgs (shallow soil) or 0.5 foot bgs (sediment).
2. The procedure for discrete sample collection were as follows:
  - Surface clearance through visual inspection;
  - Discrete sample locations were pre-cleared for MEC using a magnetometer by a UXO-qualified technician to a depth of two feet; and
  - Discrete samples were collected by MKM sample technicians to a depth of one foot bgs (shallow soil) or 0.5 foot bgs (sediment).
3. The procedure for soil boring and well installation were as follows:
  - Surface clearance through visual inspection;
  - Boring locations were pre-cleared for MEC using a magnetometer by a UXO-qualified technician to a depth of two feet;
  - Borings were advanced to two feet and re-checked using the magnetometer. Clearance was conducted at two foot intervals until native undisturbed soils were encountered or bedrock; and
  - If no potential MEC was encountered after reaching a depth of four feet, bedrock or native undisturbed soils, the borings could be advanced to their intended depth with no further MEC clearance.

### **MEC AVOIDANCE RESULTS**

No surface MEC were identified, however surface metal debris (i.e. nails, wire, fence, rebar and etc.) were encountered and identified during the MEC clearance operations. No subsurface MEC were identified, however many subsurface anomalies (assumed MEC) were identified, flagged and avoided during MEC clearance operations. No access lanes or work areas were significantly re-located due to the presence of MEC.



## Appendix E

### Shallow Soil Field Sampling Forms

C-Block Quarry

Building 1200

Landfill North of Winklepeck Burning Grounds

Pistol Range

Load Line 5

Load Line 7

Load Line 8

Load Line 10

Wet Storage Area

Buildings F-15/F-16

Anchor Test Area

Atlas Scrap Yard

Location ID: CBL55-00117-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-4-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1350 hrsSample Type: Composite - M - GrabIf MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<u>X</u>	Chromium +6	<u>X</u>	Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	FT	TAL Metals	<u>X</u>		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA	
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

no-odor, no staining  
10YR 3/2, moist, sorted,  
low plasticity silt to  
clay 20%, sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC FUS (Please Print)Signature: S. SturgeonSignature: [Signature] Date: 2/1/05

Location ID: CBL55-002M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 04-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 14:30 hrsSample Type: Composite (MI) - GrabLocation: Plotted on Map - Staked in FieldIf MI, # of increments taken: 30

Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<input checked="" type="checkbox"/>	Chromium +6	<input checked="" type="checkbox"/>	Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level <u>FT</u>	TAL Metals	<input checked="" type="checkbox"/>			QA Samples			
Temperature <u>°C</u>	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance: <u>uMHOs</u>	Cyanides				Duplicate ID		NA	
pH <u>units</u>	TOC				Equipment Rinse ID		NA	
Turbidity <u>N.T.S.</u>	Grain Size				Trip Blank ID		NA	

## Sample Description

No odor, Red/Purple staining in a few locations,  
12 YR +/- 6 moist, sorted  
Low plasticity, silt 70%,  
clay 20%, sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Smept (Please Print)Reviewed by: Eric Ellis (Please Print)Signature: Michael SmeptSignature: Eric Ellis Date: 2/1/05

Location ID: CBLSS-0034-S0

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-4-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge		
Method	Bailer	Sample Bottle	Scoop		Trowel
	Pump	Bacon Bomb	Bowl		Hand Auger
			Push Probe	X	Plastic Liner
Type/Construction			Mattocks		
Miscellaneous	Well Purging Form Yes - No				

Sample Collection: 2910 hrsSample Type: Composite - MP - GrabIf MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 2-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6	X	Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	FT	TAL Metals	X		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA	
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID	<u>CBLSS-0034-DUP</u>		
pH	units	TOC			Equipment Rinse ID	NA		
Turbidity	N.T.U.	Grain Size			Trip Blank ID	NA		

## Sample Description

No odor, no staining  
104R 3/4, well sorted, moist  
med plasticity silt 60%, clay 35%  
sand 5%

## Split Sample

Split Sample ID: CBLSS-0034-S0Name: John F. FeltAgency/Company: USACE-LOUISVINE (CEAL-ED-EX)

Address:

600 DR. MARTIN LUTHER KING JR. BLVD  
LOUISVINE, KY 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC ELLIS (Please Print)Signature: Stephen SturgeonSignature: ERIC ELLISDate: 2/1/05

Location ID: CBL55-004M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 04-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1040 hrsSample Type: Composite MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-0.5 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Chromium +6 <u>X</u>
Sample: <u>0.0</u> ppm	Propellants	
Water Level <u>FT</u>	TAL Metals <u>X</u>	
Temperature <u>°C</u>	Pesticides/PCBs	
Sp. Conductance: <u>uMHOs</u>	Cyanides	
pH <u>units</u>	TOC	
Turbidity <u>NTU</u>	Grain Size	

QA Samples		
MS/MSD	Yes / No	NA
Duplicate ID		NA
Equipment Rinse ID		NA
Trip Blank ID		NA

## Sample Description

No Odor, No Staining  
104R 4/ft, poorly sorted,  
silt 60%, sand & gravel 20%,  
clay 20%, moist, nonplastic

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelk (Please Print)Reviewed by: ERL EWS (Please Print)Signature: Michael SamelkSignature: ERL EWS Date: 2/1/05

# Field Sampling Report

Location ID: CLSS-005M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 04 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - / No		

Sample Collection: 1005 hrs

Sample Type: Composite MI Grab

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	<u>X</u>	TPH GRO		Corrosivity			
	SVOC	<u>X</u>	TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<u>X</u>	Chromium +6	<u>X</u>	Ignitability			
Sample: ppm	Propellants	<u>X</u>	Nitrate					
Water Level	FT	TAL Metals	<u>X</u>		QA Samples			
Temperature	°C	Pesticides/PCBs	<u>X</u>		MS/MSD	Yes / No	NA	
Sp. Conductance	uMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

Br. SILT 70% w/ Sand 20% Wet No Staining  
Low Plasticity in some Aliquots No Odor  
7.5 yr Y13

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Mark D. Dwyer (Please Print)

Signature: [Signature]

Reviewed by: ERIC FUIS (Please Print)

Signature: [Signature] Date: 2/1/05

# Field Sampling Report

Location ID: CBLSS-005D-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 09 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes / No		

Sample Collection: 1000 hrs

Sample Type: Composite - MI - Grab  
If MI, # of increments taken:

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	<u>X</u>	TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives		Chromium +6		Ignitability			
Sample: ppm	Propellants		Nitrate					
Water Level: FT	TAL Metals				QA Samples			
Temperature: °C	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance: uMHOs	Cyanides				Duplicate ID		NA	
pH: units	TOC				Equipment Rinse ID		NA	
Turbidity: N.T.U.	Grain Size				Trip Blank ID		NA	

## Sample Description

Br SLT 70% w/ sand 20% wet No staining  
Low Plasticity NO Odor 7.5y 4/3

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Marta Dunleavy (Please Print)

Signature: Marta Dunleavy

Reviewed by: Paul Ellis (Please Print)

Signature: Paul Ellis Date: 2/1/05

Location ID: CBL55-006M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-4-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1135 hrsSample Type: Composite - MP - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 07 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6	X	Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	FT	TAL Metals	X		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA	
Sp. Conductance:	µMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

116-0205, no staining  
10 YR 3/3, moist, sorted  
med to high plasticity,  
silt 40%, clay 30%, sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephany Sturgeon (Please Print)Reviewed by: ERIC LEWIS (Please Print)Signature: [Signature]Signature: [Signature]Date: 2/1/05

Location ID: B12SS-013M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/05/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0840 hrsSample Type: Composite - MI Grab  
If MI, # of increments taken: 32Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1' FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
	Nitrate	
Water Level <u>/</u> FT	TAL Metals <u>X</u>	
Temperature <u>/</u> °C	Pesticides/PCBs	
Sp. Conductance: <u>/</u> uMHOS	Cyanides	
pH <u>/</u> units	TOC	
Turbidity <u>/</u> N.T.U.	Grain Size	

## Sample Description

No odor, some grey and yellowish brown  
mottles.  
10 yR 4/4, moist, sandy,  
non plastic, silt 70%,  
clay 25%, sand 5%

## Split Sample

Split Sample ID: B12SS-013M-50Name: JOHN JENT (CERCL-ED-EX)Agency/Company: USACE-LouisvilleAddress: 600 DE MARTIN LUTHER KING JR. PLAZA  
LOUISVILLE, KY 40202QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field BlanksParameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC ELUS (Please Print)Signature: VijaySignature: EEH Date: 2/1/05

Location ID: B12SS-014M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/05/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0910 hrs

Sample Type: Composite - MI - Grab

Location: Plotted on Map Staked in FieldIf MI, # of increments taken: 33

Estimated - Measured - Surveyed

Sample Depth: 0-1' FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	Nitrate
Water Level <u>/</u> FT	TAL Metals <u>X</u>	QA Samples
Temperature <u>/</u> °C	Pesticides/PCBs	MS/MSD
Sp. Conductance: <u>/</u> uMHOs	Cyanides	Duplicate ID
pH <u>/</u> units	TOC	Equipment Rinse ID
Turbidity <u>/</u> N.T.U.	Grain Size	Trip Blank ID

## Sample Description

No odor, very few grey mottles  
10YR4/4, moist, well sorted  
low plasticity, silt 65%, clay 30%  
Sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: VijaySignature: [Signature] Date: 2/1/05

# Field Sampling Report

Location ID: B1255-015M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 04-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Plastic Liner
Miscellaneous	Well Purging Form Yes - No		Mattocks

Sample Collection: 1600 hrs

Sample Type: Composite - MI - Grab

Location: Plotted on Map - Staked in Field

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No odor, no staining  
104R 3/3, moist, poorly sorted  
low plasticity, silt 80%  
clay 30%, sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC ELIS (Please Print)

Signature: Michael Samelak

Signature: ERIC ELIS

Date: 2/1/05

Location ID: B1255-015D-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 04-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1545 hrsSample Type: Composite - MI - Grab  
If MI, # of increments taken:Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	<input checked="" type="checkbox"/>	TPH GRO	Corrosivity		
	SVOC		TPH DRO	Reactivity Sulfide/Cyanide		
	Explosives		Chromium +6	Ignitability		
Sample: <u>0.0</u> ppm	Propellants		Nitrate			
Water Level	FT	TAL Metals		QA Samples		
Temperature	°C	Pesticides/PCBs		MS/MSD	Yes / No	NA
Sp. Conductance:	uMHOs	Cyanides		Duplicate ID		NA
pH	units	TOC		Equipment Rinse ID		NA
Turbidity	N.T.U.	Grain Size		Trip Blank ID		NA

## Sample Description

No odor, No staining  
10 YR 3/3, moist, poorly sorted  
low plasticity, silt 60%, clay 39%  
sand 1%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael G. Samelak (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: Michael G. SamelakSignature: ERIC EWS Date: 2/1/05

Location ID: B1255-016M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-4-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 15 hrsSample Type: Composite - (MI) - Grab  
If MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<u>X</u>	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	TAL Metals	<u>X</u>			QA Samples			
Temperature	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance:	Cyanides				Duplicate ID		NA	
pH	TOC				Equipment Rinse ID		NA	
Turbidity	Grain Size				Trip Blank ID		NA	

## Sample Description

No-odor, no staining  
7.5 YR 3/2, moist, poorly sorted  
non plastic  
sand & gravel 60%  
silt 30%  
clay 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC FUS (Please Print)Signature: S. SturgeonSignature: [Signature] Date: 2/1/05

Location ID: B1255-017M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/05/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 10:25 hrs

Sample Type: Composite - MI Grab

If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-6" FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	Nitrate
Water Level <u>FT</u>	TAL Metals <u>X</u>	QA Samples
Temperature <u>°C</u>	Pesticides/PCBs	MS/MSD
Sp. Conductance: <u>uMHOs</u>	Cyanides	Duplicate ID
pH <u>units</u>	TOC	Equipment Rinse ID
Turbidity <u>N.T.U.</u>	Grain Size	Trip Blank ID

## Sample Description

Dark brown, No odor, No staining  
45 YR 2.5/1, moist, poorly sorted  
non plastic, sand & gravel 65/  
silt 30%, Clay 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC ELIS (Please Print)Signature: VijaySignature: ERSH Date: 2/1/05

Location ID: B1255-018M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/05/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0940 hrs

Sample Type: Composite - MI - Grab

If MI, # of increments taken: 31Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1' FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	
Water Level <u>0.0</u> FT	TAL Metals <u>X</u>	
Temperature	Pesticides/PCBs	QA Samples
Sp. Conductance: <u>0.0</u> uMHOs	Cyanides	MS/MSD Yes / No NA
pH	TOC	Duplicate ID NA
Turbidity	Grain Size	Equipment Rinse ID NA
		Trip Blank ID NA

## Sample Description

No odor, grey stains  
7.5 YR 8/4, moist, well sorted  
low plasticity, silt 70%, clay 25%  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC EHS (Please Print)Signature: VijaySignature: [Signature] Date: 2/1/05

# Field Sampling Report

Location ID: B1255-019M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12-1-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop <input checked="" type="checkbox"/> Trowel
	Pump	Bacon Bomb	Bowl Hand Auger
			Push Probe Plastic Liner <input checked="" type="checkbox"/>
Type/Construction			Mattocks <input checked="" type="checkbox"/>
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0845 hrs Sample Type: Composite - MI - Grab Location: Plotted on Map - Staked in Field  
 If MI, # of increments taken: 31  
 Sample Depth: 6" FT (below surface) Decon: Dedicated - Each Day - Each Location  
 Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters		Other Parameters
PID / FID Readings:	VOC	TPH GRO	Corrosivity
Background: <u>0.0</u> ppm	SVOC	TPH DRO	Reactivity Sulfide/Cyanide
	Explosives <input checked="" type="checkbox"/>	Chromium +6	Ignitability
Sample: <u>0.2</u> ppm	Propellants	Nitrate	
Water Level <u>    </u> FT	TAL Metals <input checked="" type="checkbox"/>		QA Samples
Temperature <u>    </u> °C	Pesticides/PCBs		MS/MSD Yes / No NA
Sp. Conductance: <u>    </u> uMHOs	Cyanides		Duplicate ID NA
pH <u>    </u> units	TOC		Equipment Rinse ID NA
Turbidity <u>    </u> N.T.U.	Grain Size		Trip Blank ID NA

## Sample Description

NO STAINING  
ORGANIC SEWAGE OIL (STRONG)  
10 YR 3/4 LOW PLASTICITY WET  
ORGANIC SILTY CLAY

## Split Sample

Split Sample ID:

Name:  
 Agency/Company:  
 Address:

QA/QC Provided: MS/MSD - Duplicate - Trip-Blanks - Field Blanks  
 Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Bob Weirick (Please Print)

Reviewed by: ERIC ELIS (Please Print)

Signature: Bob Weirick

Signature: Eric Ellis Date: 2/1/05

# Field Sampling Report

Location ID: B12 SS-020M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12-1-04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 0930 hrs      Sample Type: Composite - MI - Grab      Location: Plotted on Map Staked in Field  
 If MI, # of increments taken: 30  
 Sample Depth: 6 FT (below surface)      Decon: Dedicated - Each Day - Each Location      Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings:	VOC		TPH GRO		Corrosivity			
Background: <u>0.0</u> ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	TAL Metals	X			QA Samples			
Temperature	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance:	Cyanides				Duplicate ID		NA	
pH	TOC				Equipment Rinse ID		NA	
Turbidity	Grain Size				Trip Blank ID		NA	

## Sample Description

NO STAINING  
Organic Residue (SUSPENDED)  
10YR 4/3      LOW PLASTICITY MOIST WET  
SILTY CLAY w/ GRAVEL

## Split Sample

Split Sample ID:

Name:  
Agency/Company:  
Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
 Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Bob Weirick (Please Print)

Reviewed by: ERIC EWS (Please Print)

Signature: Bob Weirick

Signature: Eric EWS Date: 2/1/05

Location ID: B1255-021 M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/16/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge		
Method	Bailer	Sample Bottle	Scoop		Trowel
	Pump	Bacon Bomb	Bowl		Hand Auger
			Push Probe		Plastic Liner
Type/Construction			Mattocks	X	
Miscellaneous	Well Purging Form Yes - No				

Sample Collection: 0925 hrsSample Type: Composite - MF - GrabIf MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-6" FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings: Background: <u>0.9</u> ppm	VOC		TPH GRO		Corrosivity	
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide	
	Explosives	X	Chromium +6		Ignitability	
Sample: <u>0.0</u> ppm	Propellants		Nitrate			
Water Level	FT	TAL Metals	X		QA Samples	
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No NA
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID	NA
pH	units	TOC			Equipment Rinse ID	NA
Turbidity	N.T.U.	Grain Size			Trip Blank ID	NA

## Sample Description

NO odor NO staining  
104R 3/2 moist & poorly sorted  
non plastic clay 20' silt 30'  
sand & gravel 10'  
3/4 had no standing water.

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: VijaySignature: ERIC EWS Date: 2/1/05

Location ID: BRSS-022M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/10/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1025 hrsSample Type: Composite MI GrabIf MI, # of increments taken: 31Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

## Field Parameters

(at time of sample)

## PID / FID Readings:

Background:

ppm

0.0

Sample:

ppm

0.8

Water Level

FT

Temperature

°C

Sp. Conductance:

uMHOs

pH

units

Turbidity

N.T.U.

## Analytical Parameters

VOC

TPH GRO

SVOC

TPH DRO

Explosives

X

Chromium +6

Propellants

Nitrate

TAL Metals

X

Pesticides/PCBs

Cyanides

TOC

Grain Size

## Other Parameters

Corrosivity

Reactivity Sulfide/Cyanide

Ignitability

## QA Samples

MS/MSD

Yes / No

NA

Duplicate ID

NA

Equipment Rinse ID

NA

Trip Blank ID

NA

## Sample Description

No odor, some orange & grey  
mottles10YR 4/4 moist, well sorted  
low plasticity, clay 40%, silt 55%,  
sand 5%

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As ListedLogged By: Vijay Alluri (Please Print)Reviewed by: ERIC FWS (Please Print)Signature: VijaySignature: Eric Date: 2/1/05

Location ID: LNWSS-028M-SD  
Date: 10-26-04

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

### Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1520 hrs      Sample Type: Composite MI - Grab      Location: Plotted on Map - Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-7 FT (below surface)      Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

NO-odor, light brown mottle  
104R 3/6, moist, well sorted,  
non plastic, silt 80%, clay 20%

Split Sample ID: LNWSS-028M-SD  
Name: John Jent  
Agency/Company: LASACE Louisville  
Address: 600 DE MARIN WINTER KINGS JR PARK  
LOUISVILLE KY 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color    Odor    Staining    Texture    Sorting    Plasticity    Moisture

Water sample description should include:

Color    Odor    Sheen    Turbidity

Logged By: Stephen Sturgeon (Please Print)

Signature: [Signature]

Reviewed by: ERIC ELLIS (Please Print)

Signature: [Signature] Date: 2/1/05

Location ID: LNWSS - 029M-50 Field Sampling ReportRavenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 10/25/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1550 hrsSample Type: Composite - MI - GrabIf MI, # of increments taken: 20Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.4</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No odor, No stainingDK. Br. 10% 4 1/2 SILT 65% w/ clay 20% MoistLow Plasticity Poorly Sorted

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC FLIS (Please Print)Signature: VijaySignature: SRSH Date: 2/1/05

Location ID: L12W55-030M-50 **Field Sampling Report**

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 25-Oct-04

### Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1455 hrs

Sample Type: Composite MI - Grab  
If MI, # of increments taken: 30

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings:	VOC	TPH GRO		Corrosivity		
Background: <u>0.0</u> ppm	SVOC	TPH DRO		Reactivity Sulfide/Cyanide		
	Explosives	Chromium +6		Ignitability		
Sample: <u>6.6</u> ppm	Propellants	Nitrate				
Water Level <u>/</u> FT	TAL Metals			QA Samples		
Temperature <u>/</u> °C	Pesticides/PCBs			MS/MSD	Yes / No	NA
Sp. Conductance: <u>/</u> uMHOs	Cyanides			Duplicate ID		NA
pH <u>/</u> units	TOC			Equipment Rinse ID		NA
Turbidity <u>/</u> N.T.U.	Grain Size			Trip Blank ID		NA

### Sample Description

No odor, orange + grey mottles  
10YR 4/6, moist well sorted,  
high plasticity, clay 60%, silt 35%  
sand 5%

### Split Sample

Split Sample ID: \_\_\_\_\_

Name: \_\_\_\_\_

Agency/Company: \_\_\_\_\_

Address: \_\_\_\_\_

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC ELUS (Please Print)

Signature: Michael Samelak

Signature: ERIC ELUS

Date: 2/1/05

Location ID: LNWSS-030D-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 25-Oct-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			
Miscellaneous	Well Purgings Form Yes - No		

Sample Collection: 1455 hrsSample Type: Composite - (MI) - Grab  
If MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC <u>X</u>	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>6.6</u> ppm	TPH GRO	
	TPH DRO	
	Chromium +6	
	Nitrate	
Water Level	TAL Metals	
Temperature	Pesticides/PCBs	
Sp. Conductance:	Cyanides	
pH	TOC	
Turbidity	Grain Size	

## Sample Description

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Parnozzo (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: [Signature]Signature: [Signature]Date: 2-1-05

Location ID: LIVWSS-03114-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 10-26-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1410 hrsSample Type: Composite - MI - Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No-odor, light gray mottle  
10YR 4/4 moist non plastic  
well sorted, silt 65%, clay 20%  
sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC ELUS (Please Print)Signature: S. SturgeonSignature: SEK Date: 2/1/05

Location ID: 4NWSS-031M-QA

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 10-26-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1445 hrsSample Type: Composite - MD - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters		Other Parameters	
PID / FID Readings:	VOC	TPH GRO	Corrosivity	
Background: <u>0.0</u> ppm	SVOC <u>X</u>	TPH DRO	Reactivity Sulfide/Cyanide	
	Explosives <u>X</u>	Chromium +6	Ignitability	
Sample: <u>0.0</u> ppm	Propellants	Nitrate		
Water Level	TAL Metals <u>X</u>		QA Samples	
Temperature	Pesticides/PCBs		MS/MSD	Yes / No NA
Sp. Conductance:	Cyanides		Duplicate ID	NA
pH	TOC		Equipment Rinse ID	NA
Turbidity	Grain Size		Trip Blank ID	NA

## Sample Description

No odor, copper mottle  
10YR 4/4, moist, well plasticity,  
sorted, silt 65%, clay 30%,  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC JEWIS (Please Print)Signature: S SturgeonSignature: ERIC JEWIS Date: 2/1/05

Location ID: LNW55-032M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 10-26-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 9:35 hrsSample Type: Composite - M - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 2-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

Light brown clay, no odor, no staining  
10yR 4/4, moist, non plastic  
well sorted, silt 80%, clay 15%  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC ELLIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

Location ID: LN WSS - 033 M-50 **Field Sampling Report**

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 10/26/04

**Sampling Information**

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1030 hrs      Sample Type: Composite - MI - Grab      Location: Plotted on Map Staked in Field  
 If MI, # of increments taken: 30  
 Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day - Each Location      Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings:	VOC		TPH GRO		Corrosivity			
Background: <u>0.0</u> ppm	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level: _____ FT	TAL Metals	X			QA Samples			
Temperature: _____ °C	Pesticides/PCBs				MS/MSD	Yes / No		NA
Sp. Conductance: _____ uMHOs	Cyanides				Duplicate ID			NA
pH: _____ units	TOC				Equipment Rinse ID			NA
Turbidity: _____ N.T.U.	Grain Size				Trip Blank ID			NA

**Sample Description**  
No odor, few grey mottles  
104, 416 Br SILT 75% w/ Sand 20% Dry No Plasticity  
Poorly Sorted

**Split Sample**  
 Split Sample ID: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Agency/Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
 Parameters: Same as Above - As Listed

**Soil sample description should include:**  
 Munsell Color Odor Staining Texture Sorting Plasticity Moisture

**Water sample description should include:**  
 Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)      Reviewed by: ERIC ELLIS (Please Print)  
 Signature: Vijay      Signature: [Signature]      Date: 2/1/05

# Field Sampling Report

Location ID: LNWSS-034M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/01/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		slide hammer X

Sample Collection: 1415 hrs Sample Type: Composite (MI) - Grab Location: Plotted on Map Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-1 FT (below surface) Decon: Dedicated - Each Day (Each Location)  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters		
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity		
	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide		
	Explosives	X	Chromium +6		Ignitability		
Sample: <u>0.0</u> ppm	Propellants	X	Nitrate				
Water Level <u>/</u> FT	TAL Metals	X			QA Samples		
Temperature °C	Pesticides/PCBs	X					
Sp. Conductance: uMHOs	Cyanides						
pH units	TOC						
Turbidity N.T.U.	Grain Size						
					MS/MSD	Yes / No	NA
					Duplicate ID		NA
					Equipment Rinse ID		NA
					Trip Blank ID		NA

## Sample Description

10yr 3/4 BRISILT 70% w/ Sand 20% Dry No Odor  
No Staining No Plasticity Poorly Sorted

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Arluri (Please Print)

Reviewed by: FRAC FLUS (Please Print)

Signature: Vijay

Signature: SKS Date: 2/1/05

# Field Sampling Report

Location ID: LNWSS -034 D-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/01/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1425 hrs

Sample Type: Composite - MI - Grab  
If MI, # of increments taken: 1

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters
PID / FID Readings:	VOC	<u>X</u>	TPH GRO	Corrosivity
Background: <u>0.0</u> ppm	SVOC		TPH DRO	Reactivity Sulfide/Cyanide
	Explosives		Chromium +6	Ignitability
Sample: <u>0.0</u> ppm	Propellants		Nitrate	
Water Level <u>      </u> FT	TAL Metals			
Temperature <u>      </u> °C	Pesticides/PCBs			
Sp. Conductance: <u>      </u> uMHOs	Cyanides			
pH <u>      </u> units	TOC			
Turbidity <u>      </u> N.T.U.	Grain Size			

## Sample Description

No odor, No staining  
10yr 3/4 Br. S&LT 70% w/ Sand 20% Dry No Odor  
No Staining No Plasticity Poorly Sorted

## Split Sample

Split Sample ID:       

Name:       

Agency/Company:       

Address:       

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)

Reviewed by: ERIC ELLIS (Please Print)

Signature: Vijay

Signature: ERIC ELLIS Date: 2/1/05

Location ID: 2NWSS-035M  
Date: 10-26-04

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

### Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1105 hrs      Sample Type: Composite - MI - Grab      Location: Plotted on Map - Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level	TAL Metals	X			QA Samples			
Temperature	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance:	Cyanides				Duplicate ID		NA	
pH	TOC				Equipment Rinse ID		NA	
Turbidity	Grain Size				Trip Blank ID		NA	

### Sample Description

no odor, no staining  
10YR 4/4, moist, well sorted  
non plastic, silt 85%, clay 15%

### Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color    Odor    Staining    Texture    Sorting    Plasticity    Moisture

Water sample description should include:

Color    Odor    Sheen    Turbidity

Logged By: Stephen Sturgeon (Please Print)

Signature: S. Sturgeon

Reviewed by: ERIC EUS (Please Print)

Signature: Eric Eus      Date: 2/1/05

Location ID: L14BUSS-03614

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 10-26-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1330 hrsSample Type: Composite MI - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field

Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC <u>X</u>	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
	Nitrate	
Water Level <u>/</u> FT	TAL Metals <u>X</u>	
Temperature <u>/</u> °C	Pesticides/PCBs	
Sp. Conductance: <u>/</u> uMHOs	Cyanides	
pH <u>/</u> units	TOC	
Turbidity <u>/</u> N.T.U.	Grain Size	

## Sample Description

no color, no staining  
10yr 3/4, moist, well sorted  
nan plastic, silt 75%, clay 20%  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Reviewed by: ERIC ELLIS (Please Print)Signature: S. SturgeonSignature: ERIC ELLIS Date: 2/1/05

Location ID: LNWSS-037M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 1-NOV-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1015 hrsSample Type: Composite MI GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters  
(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background: 0.0 ppm

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Sample: 0.0 ppm

Propellants

Nitrate

## Water Level

FT

TAL Metals

## Temperature

°C

Pesticides/PCBs

## Sp. Conductance:

uMHOs

Cyanides

## pH

units

TOC

## Turbidity

N.T.U.

Grain Size

## QA Samples

MS/MSD

Yes / No

NA

Duplicate ID

LNWSS-037M-DUP

Equipment Rinse ID

NA

Trip Blank ID

NA

## Sample Description

Dark Brown Silt 70% w/sand  
25%. No odor, No staining,  
no plasticity. Most locations Dry  
7.5yr - 2.5/3

Split Sample ID: LNWSS-037M-50Name: John Jent (CELRL-ED-E)Agency/Company: USACE - LOUISVILLEAddress: 600 Dr Martin Luther King Place  
Louisville Ky 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Panozzo (Please Print)Reviewed by: Sue Boles (Please Print)Signature: [Signature]Signature: [Signature] Date: 01/23/05

# Field Sampling Report

Location ID: LNWSS-088M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 01 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1055 hrs

Sample Type: Composite MI Grab

Locations: Plotted on Map - Staked in Field

If MI, # of increments taken: 50

Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC	<u>X</u>	TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<u>X</u>	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level <u>    </u> FT	TAL Metals	<u>X</u>			QA Samples			
Temperature <u>    </u> °C	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance: <u>    </u> uMHOs	Cyanides				Duplicate ID		NA	
pH <u>    </u> units	TOC				Equipment Rinse ID		NA	
Turbidity <u>    </u> N.T.U.	Grain Size				Trip Blank ID		NA	

## Sample Description

Dark Br. SILT 60% w/ Sand 30% Dry No Odor  
No Staining No Plasticity 7.5% 3/4

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Mark Dunlavy (Please Print)

Reviewed by: ERIC ELLIS (Please Print)

Signature: [Signature]

Signature: [Signature]

Date: 2/1/05

# Field Sampling Report

Location ID: LAWSS-039M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 01 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	Slide Hammer
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1150 hrs

Sample Type: Composite - MI Grab  
If MI, # of increments taken: 30

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity	
	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide	
	Explosives	X	Chromium +6		Ignitability	
Sample: <u>0-0</u> ppm	Propellants	X	Nitrate			
Water Level	FT	TAL Metals	X		QA Samples	
Temperature	°C	Pesticides/PCBs	X		MS/MSD	Yes / No NA
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID	NA
pH	units	TOC			Equipment Rinse ID	NA
Turbidity	N.T.U.	Grain Size			Trip Blank ID	NA

## Sample Description

DE. Br. S&LT 65% w/ sand 30% Dry No Odor, No staining  
No plasticity 7.5yr S/S

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Mark Dinkley (Please Print)

Reviewed by: ERIC ELLIS (Please Print)

Signature: [Signature]

Signature: [Signature] Date: 2/1/05

Location ID: LNWSS-039D-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 01 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge			
Method	Bailer	Sample Bottle	Scoop		Trowel	
	Pump	Bacon Bomb	Bowl		Hand Auger	
			Push Probe	X	Plastic Liner	X
Type/Construction			Mattocks			
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1150 hrsSample Type: Composite - MI Grab  
If MI, # of increments taken:Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

## Field Parameters

(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background:

ppm

0.0

Sample:

0.0

ppm

## Water Level

FT

## Temperature

°C

## Sp. Conductance:

uMHOs

## pH

units

## Turbidity

N.T.U.

VOC

X

TPH GRO

SVOC

TPH DRO

Explosives

Chromium +6

Propellants

Nitrate

Corrosivity

Reactivity Sulfide/Cyanide

Ignitability

## QA Samples

MS/MSD

Yes / No

NA

Duplicate ID

NA

Equipment Rinse ID

NA

Trip Blank ID

NA

Saturated Dk. Brown Sample Description  
SLT 70% w/ Sand 25%. No odorNo staining, No Plasticity 7.5yr 4/6

Split Sample ID:

Split Sample

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: M. D. Jenkins (Please Print)Signature: [Signature]Reviewed by: ERIC ELLIS (Please Print)Signature: [Signature] Date: 2/1/05

# Field Sampling Report

Location ID: LNW55-040M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 01 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1530 hrs

Sample Type: Composite MI Grab

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings:	VOC		TPH GRO	Corrosivity		
Background: <u>0.0</u> ppm	SVOC	X	TPH DRO	Reactivity Sulfide/Cyanide		
	Explosives	X	Chromium +6	Ignitability		
Sample: <u>0.0</u> ppm	Propellants		Nitrate			
Water Level	TAL Metals	X		QA Samples		
Temperature	Pesticides/PCBs			MS/MSD	Yes / No	NA
Sp. Conductance:	Cyanides			Duplicate ID		NA
pH	TOC			Equipment Rinse ID		NA
Turbidity	Grain Size			Trip Blank ID		NA

## Sample Description

Dr Bc/Black SILT 60% w/ Sand 35%. No Odor No Staining  
No Plasticity Dry 10y-12/2

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Mark Dinkley (Please Print)

Reviewed by: ERIC ELLIS (Please Print)

Signature: [Signature]

Signature: [Signature]

Date: 2/1/05

Location ID: LNWSS - 041 M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/01/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1515 hrsSample Type: Composite - MI - GrabLocation: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedIf MI, # of increments taken: 30Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate					
Water Level: <u>    </u> FT	TAL Metals	X			QA Samples			
Temperature: <u>    </u> °C	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance: <u>    </u> uMHOs	Cyanides				Duplicate ID		NA	
pH: <u>    </u> units	TOC				Equipment Rinse ID		NA	
Turbidity: <u>    </u> N.T.U.	Grain Size				Trip Blank ID		NA	

## Sample Description

No odor, No staining10YR 3/3, no odor, non plastic  
sorted, moist silt (80%) and  
clay

## Split Sample

Split Sample ID:     Name:     Agency/Company:     Address:     QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Vijay Alluri (Please Print)Reviewed by: ERIC ELUS (Please Print)Signature: VijaySignature: skch Date: 2/1/05

# Field Sampling Report

Location ID: LNWSS-042M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 01 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	Slide hammer
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 0925 hrs

Sample Type: Composite MI - Grab

Location: Plotted on Map - Staked in Field

If MI, # of increments taken: 30

Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters		Other Parameters	
PID / FID Readings:	VOC	TPH GRO	Corrosivity	
Background: <u>0.0</u> ppm	SVOC	TPH DRO	Reactivity Sulfide/Cyanide	
	Explosives	Chromium +6	Ignitability	
Sample: <u>0.0</u> ppm	Propellants	Nitrate		
Water Level	TAL Metals		QA Samples	
Temperature	Pesticides/PCBs		MS/MSD	Yes / No
Sp. Conductance:	Cyanides		Duplicate ID	NA
pH	TOC		Equipment Rinse ID	NA
Turbidity	Grain Size		Trip Blank ID	NA

## Sample Description

DK. Br. SILT 65% w/ clay 25% and sand  
Dry in Most Locations No Odor No Staining Poorly Sorted  
No Plasticity 7.5yr Y/G  
- OLD BARN FOOTPRINT LOCATION -

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Mark Dunlop (Please Print)

Reviewed by: ERIC ELUS (Please Print)

Signature: [Signature]

Signature: [Signature]

Date: 2/1/05

Location ID: PIRSS-001M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/16/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1215 hrs      Sample Type: Composite - MI Grab      Location: Plotted on Map Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No odor, No staining  
7.5 YR 3/2, moist, poorly sorted  
Low plasticity, silt 75%, clay 25%  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: JAMES KANORZO (Please Print)Reviewed by: ERIC ELUIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

Location ID: PIRSS-002M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/16/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe <u>SS</u>	<u>X</u> Plastic Liner <u>X</u>
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form <u>X</u> Yes - <u>No</u>			

Sample Collection: 1500 hrs Sample Type: Composite MI - Grab Location: Plotted on Map - Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-1 FT (below surface) Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters  
(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background:

ppm

0.0

Sample:

ppm

0.0

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Propellants

Nitrate

Water Level

FT

TAL Metals

Temperature

°C

Pesticides/PCBs

Sp. Conductance:

uMHOs

Cyanides

pH

units

TOC

Turbidity

N.T.U.

Grain Size

## QA Samples

MS/MSD

Yes / No

NA

Duplicate ID

NA

Equipment Rinse ID

NA

Trip Blank ID

NA

## Sample Description

No odor, No staining10xR 3/4, moist, sorted,  
non plastic, silt 85%, clay 15%  
sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James P. G. 0220 (Please Print)Reviewed by: ERIC ELIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

Location ID: PIRSS-003M-SO

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-16-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1420 hrs Sample Type: Composite MI Grab 30 Location: Plotted on Map Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 2-1 FT (below surface) Decon: Dedicated - Each Day Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC <u>X</u>	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants <u>X</u>	
	Nitrate	
Water Level	TAL Metals <u>X</u>	QA Samples
Temperature	Pesticides/PCBs <u>X</u>	MS/MSD Yes / No NA
Sp. Conductance:	Cyanides	Duplicate ID NA
pH	TOC	Equipment Rinse ID NA
Turbidity	Grain Size	Trip Blank ID NA

## Sample Description

No odor, No Staining  
104R 3/4, moist, sorted  
non plastic, silt 65%, clay 25%,  
sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James R. Hozz (Please Print)Reviewed by: ERIC ELUS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

Location ID: PIRSS-003D-SO

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-16-04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge				
Method	Bailer		Sample Bottle		Scoop		Trowel		
	Pump		Bacon Bomb		Bowl		Hand Auger		
					Push Probe	SS	X	Plastic Liner	X
Type/Construction					Mattocks				
Miscellaneous	Well Purging Form Yes - No								

Sample Collection: 1420 hrs Sample Type: Composite - MI - Grab Discrete Location: Plotted on Map - Staked in Field  
Sample Depth: 0-1 FT (below surface) If MI, # of increments taken:            Estimated - Measured - Surveyed  
Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings:	VOC	X	TPH GRO		Corrosivity			
Background: ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives		Chromium +6		Ignitability			
Sample: ppm	Propellants		Nitrate					
Water Level	TAL Metals				QA Samples			
Temperature °C	Pesticides/PCBs				MS/MSD	Yes / No		NA
Sp. Conductance: uMHOs	Cyanides				Duplicate ID			NA
pH units	TOC				Equipment Rinse ID			NA
Turbidity N.T.U.	Grain Size				Trip Blank ID			NA

## Sample Description

No odor, No staining  
10% R 3/6, malt, poorly sorted  
non plastic  
silt 70%, sand 20%, clay 5%  
Taken from a depression area.

VOC for full suite sample PI RSS-003M-SO

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: JAMES KNOWNO (Please Print)Reviewed by: ERIC BLUS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

Location ID: PIRSS-004M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/16/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0935 hrsSample Type: Composite - MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals <u>X</u>	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No odor, No staining  
104R 4/6, moist, well sorted  
non plastic, silt 80%, clay 5%,  
sand 15%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Ranozza (Please Print)Reviewed by: ERIC ELIS (Please Print)Signature: [Signature]Signature: [Signature]Date: 2/1/05

Location ID: PIRSS-005M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-16-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1025 hrsSample Type: Composite - MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

## Field Parameters

(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background:

ppm

0.0

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Sample:

ppm

0.0

Propellants

Nitrate

Water Level

FT

TAL Metals

Temperature

°C

Pesticides/PCBs

MS/MSD

## QA Samples

Yes / No

NA

Sp. Conductance:

uMHOs

Cyanides

Duplicate ID

PIRSS-005M-DUP NA

pH

units

TOC

Equipment Rinse ID

NA

Turbidity

N.T.U.

Grain Size

Trip Blank ID

NA

## Sample Description

No odor, No staining10 YR 3/4, moist, sorted  
hard plastic, silt 80', sand 15'  
clay 5'Two bullets noticed in sample during  
collection.Split Sample ID: PIRSS-005M-50Name: John TentAgency/Company: USACE-LOUISVILLE

Address:

600 DL MARTIN WHITE WALKER PLAZA  
LOUISVILLE, KY 40202QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field BlanksParameters: Same as Above As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Panizzo (Please Print)Reviewed by: ERIC BLIS (Please Print)Signature: James PanizzoSignature: ERIC BLIS Date: 2/1/05

Location ID: PIRSS-006M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/16/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1355 hrs Sample Type: Composite MI - Grab 30 Location: Plotted on Map - Staked in Field  
Sample Depth: 01 FT (below surface) If MI, # of increments taken: 30 Estimated - Measured - Surveyed  
Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC	Reactivity Sulfide/Cyanide
Sample: <u>0.0</u> ppm	Explosives <u>X</u>	Ignitability
	Propellants	
Water Level	TAL Metals <u>X</u>	QA Samples
Temperature	Pesticides/PCBs	MS/MSD Yes / No NA
Sp. Conductance:	Cyanides	Duplicate ID NA
pH	TOC	Equipment Rinse ID NA
Turbidity	Grain Size	Trip Blank ID NA

## Sample Description

No odor, No staining  
104R 3/6, well  
non plastic, silt 85%, sand 10/  
clay 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Kozar (Please Print)Reviewed by: ERIC ELUIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/1/05

# Field Sampling Report

Location ID: LL555-001M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1405 hrs

Sample Type: Composite MI - Grab

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.9</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <input checked="" type="checkbox"/>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	Nitrate <input checked="" type="checkbox"/>
<del>Water Level</del> FT	TAL Metals <input checked="" type="checkbox"/>	<b>QA Samples</b> MS/MSD Yes / No NA Duplicate ID NA Equipment Rinse ID NA Trip Blank ID NA
<del>Temperature</del> °C	Pesticides/PCBs	
<del>Sp. Conductance:</del> uMHOs	Cyanides	
<del>pH</del> units	TOC	
<del>Turbidity</del> N.T.U.	Grain Size	

### Sample Description

No Odor, Some Orange + grey mottles  
10yr 4/4, moist, sorted  
low plasticity, silt 60%

clay 35%  
sand 5%

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

### Split Sample

Split Sample ID: \_\_\_\_\_

Name: \_\_\_\_\_

Agency/Company: \_\_\_\_\_

Address: \_\_\_\_\_

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Michael Samojak (Please Print)

Reviewed by: ERIC EWS (Please Print)

Signature: Michael Samojak

Signature: SPH Date: 2/3/05

# Field Sampling Report

Location ID: LL555-002M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12 Nov 04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1105 hrs

Sample Type: Composite - MI - Grab  
If MI, # of increments taken: 30

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<input checked="" type="checkbox"/>	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	<input checked="" type="checkbox"/>				
Water Level FT	TAL Metals	<input checked="" type="checkbox"/>			QA Samples			
Temperature °C	Pesticides/PCBs				MS/MSD	Yes / No	<u>NA</u>	
Sp. Conductance: uMHOs	Cyanides				Duplicate ID	<u>LL555-002M-DUP</u> <u>NA</u>		
pH units	TOC				Equipment Rinse ID	<u>NA</u>		
Turbidity N.T.U.	Grain Size				Trip Blank ID	<u>NA</u>		

### Sample Description

No Odor, No staining  
100% 3/3, moist, sorted  
low plasticity, silt 60%, clay 35%  
sand 5%

### Split Sample

Split Sample ID: LL555-002M-50  
Name: John Went (CEM-EX-ED)  
Agency/Company: USACE - Louisville  
Address: 600 DE MARTIN WICKER KING PLAZA  
LOUISVILLE KY 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERK EUS (Please Print)

Signature: Michael Samelak

Signature: ERK EUS Date: 2/3/05

Location ID: LL551 - 003M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-12-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1100 hrsSample Type: Composite - (MI) - GrabLocation: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
	Nitrate <u>X</u>	
Water Level	TAL Metals <u>X</u>	QA Samples
Temperature	Pesticides/PCBs	MS/MSD Yes / No NA
Sp. Conductance:	Cyanides	Duplicate ID NA
pH	TOC	Equipment Rinse ID NA
Turbidity	Grain Size	Trip Blank ID NA

## Sample Description

104R73  
no odors, no staining, moist  
no plastic, sorted, silt 60'  
clay 25', sand & gravel 15'

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Shikha Taher (Please Print)Reviewed by: ERIC ELIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/3/05

# Field Sampling Report

Location ID: LL555-004M-80

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12 Nov 04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	
	Pump		Bacon Bomb		Bowl	
					Push Probe	✓ Plastic Liner ✓
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1020 hrs      Sample Type: Composite - MI Grab      Location: Plotted on Map Staked in Field  
 If MI, # of increments taken: 30  
 Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day Each Location  
 Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters															
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity															
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide															
	Explosives	✓	Chromium +6		Ignitability															
Sample: <u>0.0</u> ppm	Propellants		Nitrate	✓	<b>QA Samples</b> <table border="1"> <tr> <td>MS/MSD</td> <td>Yes / No</td> <td>NA</td> </tr> <tr> <td>Duplicate ID</td> <td></td> <td>NA</td> </tr> <tr> <td>Equipment Rinse ID</td> <td></td> <td>NA</td> </tr> <tr> <td>Trip Blank ID</td> <td></td> <td>NA</td> </tr> </table>				MS/MSD	Yes / No	NA	Duplicate ID		NA	Equipment Rinse ID		NA	Trip Blank ID		NA
MS/MSD	Yes / No	NA																		
Duplicate ID		NA																		
Equipment Rinse ID		NA																		
Trip Blank ID		NA																		
Water Level	FT	TAL Metals	✓																	
Temperature	°C	Pesticides/PCBs																		
Sp. Conductance:	uMHOs	Cyanides																		
pH	units	TOC																		
Turbidity	N.T.U.	Grain Size																		

### Sample Description

No Odor, No Staining  
7.5 yR 3/1, moist, poorly sorted  
horn plastic, 80% + 20%  
clay 25%  
sand 5%

### Split Sample

Split Sample ID: \_\_\_\_\_

Name: \_\_\_\_\_

Agency/Company: \_\_\_\_\_

Address: \_\_\_\_\_

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC FUIS (Please Print)

Signature: Michael Samelak

Signature: [Signature] Date: 2/3/05

Location ID: LL555-005M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 19 NOV 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks (NOT INCLUDED IN ER) ✓
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1415 hrsSample Type: Composite MI GrabLocation: Plotted on Map - Staked in FieldSample Depth: 0-0.5 FT (below surface)Decon: Dedicated - Each Day Each Location

Estimated - Measured - Surveyed

Field Parameters  
(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background:

ppm

0.0

Sample:

0.6

ppm

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Propellants

Nitrate

Water Level

FT

TAL Metals

Temperature

°C

Pesticides/PCBs

Sp. Conductance:

uMHOs

Cyanides

pH

units

TOC

Turbidity

N.T.U.

Grain Size

## QA Samples

MS/MSD

Yes / No

Duplicate ID

Equipment Rinse ID

LL555-005M-ER NA

Trip Blank ID

TRIP BLANK NA

## Sample Description

NO ODOR, NO STAINING7.5 YR 3/2 NON PLASTIC POORLY SORTED MOISTSILTY SAND W/ TRACE CLAY

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)Reviewed by: EUGENIS (Please Print)Signature: Michael SamelakSignature: ASL Date: 2/3/07

# Field Sampling Report

Location ID: LL5DD-005D-SD

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/19/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1345 hrs

Sample Type: Composite - MI Grab  
If MI, # of increments taken:

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-0.5 FT (below surface)

Decon: Dedicated - Each Day - Each Location

## Field Parameters

(at time of sample)

### PID / FID Readings:

Background:

0.0

Sample:

0.6

## Analytical Parameters

VOC	✓	TPH GRO
SVOC		TPH DRO
Explosives		Chromium +6
Propellants		Nitrate

## Other Parameters

Corrosivity

Reactivity Sulfide/Cyanide

Ignitability

Water Level

FT

Temperature

°C

Sp. Conductance:

uMHOs

pH

units

Turbidity

N.T.U.

TAL Metals

Pesticides/PCBs

Cyanides

TOC

Grain Size

## QA Samples

MS/MSD

Yes / No NA

NA

Duplicate ID

NA

NA

Equipment Rinse ID

LL5DD-005D-ER NA

Trip Blank ID

TRIP BLANK NA

## Sample Description

NO ODOR, NO STAINING

(SAME AS LL5SS-005M-SD)

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: NILESH SHRINGARPORE (Please Print)

Reviewed by: ERIC EWS (Please Print)

Signature: Shringarpore

Signature: Eric EWS

Date: 2/3/05

Location ID: LL555-006M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/12/04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1440 hrsSample Type: Composite - MI - GrabIf MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	✓	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	✓				
Water Level	FT	TAL Metals	✓		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA	
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

NO ODOR, ORANGE / GREY MOTTLES104R 3/2, mast, sandednon plasticsilt 70%clay 25%sand 5%

## Split Sample

Split Sample ID: \_\_\_\_\_

Name: \_\_\_\_\_

Agency/Company: \_\_\_\_\_

Address: \_\_\_\_\_

QA/QC Provided: MS/MSD - Duplicate Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: NILESH SHRINGAPURE (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: N. ShringapureSignature: Eric Ews Date: 2/3/05

Location ID: LL 555-007M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 12 Nov '04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction		Mattocks	Plastic Liner
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 14:15 hrs Sample Type: Composite MI - Grab Location: Plotted on Map - Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0.1 FT (below surface) Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters  
(at time of sample)

## Analytical Parameters

## Other Parameters

## PID / FID Readings:

Background:

ppm

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Sample:

ppm

Propellants

Nitrate

Water Level

FT

TAL Metals

Temperature

°C

Pesticides/PCBs

MS/MSD

Yes / No

NA

Sp. Conductance:

uMHOs

Cyanides

Duplicate ID

NA

pH

units

TOC

Equipment Rinse ID

NA

Turbidity

N.T.U.

Grain Size

Trip Blank ID

NA

## Sample Description

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Shahram Tahsinia (Please Print)Reviewed by: ERIC FUS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/3/05

# Field Sampling Report

Location ID: 66588-008 M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11-12-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1500 hrs

Sample Type: Composite - MI - Grab

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

## Field Parameters (at time of sample)

## Analytical Parameters

## Other Parameters

PID / FID Readings: Background: <u>0.0</u> ppm	VOC	<u>ST</u>	TPH GRO		Corrosivity		
	SVOC	<u>ST</u>	TPH DRO		Reactivity Sulfide/Cyanide		
	Explosives	<u>X</u>	Chromium +6		Ignitability		
Sample: <u>0.0</u> ppm	Propellants		Nitrate	<u>X</u>			
Water Level	FT	TAL Metals	<u>X</u>		QA Samples		
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID		NA
pH	units	TOC			Equipment Rinse ID		NA
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA

## Sample Description

10' R 3/3  
NO odor, no staining, moist  
non plastic, sorted, silt 70%  
clay 20% sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Shahram Taheri (Please Print)

Reviewed by: ERIC EWS (Please Print)

Signature: [Signature]

Signature: [Signature] Date: 2/3/05

Location ID: LL55-009M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0835 hrsSample Type: Composite - MI - GrabLocation: Plotted on Map Staked in FieldIf MI, # of increments taken: 30

Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: ppm	TPH GRO	
	TPH DRO	
	Chromium +6	
	Nitrate	
Water Level FT	TAL Metals	QA Samples
Temperature °C	Pesticides/PCBs	MS/MSD Yes / No NA
Sp. Conductance: uMHOs	Cyanides	Duplicate ID NA
pH units	TOC	Equipment Rinse ID NA
Turbidity N.T.U.	Grain Size	Trip Blank ID NA

## Sample Description

No Odor, Orange + grey mottles  
104R 3/6, moist, sorted med plasticity  
silt 60%, clay 35%, sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)Reviewed by: ERIC ELMS (Please Print)Signature: Michael SamelakSignature: ERIC ELMS Date: 2/3/05

Location ID: LL555-010M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 0925 hrs      Sample Type: Composite - MI Grab      Location: Plotted on Map - Staked in Field  
If MI, # of increments taken: 30  
Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background:      ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	✓	Chromium +6		Ignitability			
Sample:      ppm	Propellants		Nitrate	✓				
Water Level      FT	TAL Metals	✓			QA Samples			
Temperature      °C	Pesticides/PCBs				MS/MSD	Yes / No	<u>NA</u>	
Sp. Conductance:      uMHOs	Cyanides				Duplicate ID	<u>LL555-010M-DUP</u> NA		
pH      units	TOC				Equipment Rinse ID	<u>NA</u>		
Turbidity      N.T.U.	Grain Size				Trip Blank ID	<u>NA</u>		

## Sample Description

No Odor, Some Orange Mottles  
10yR 3/6, moist, Sorted  
Low to med plasticity  
silt 60%  
clay 35%  
sand 5%

## Split Sample

Split Sample ID: LL555-010M-50  
Name: John Vent (CERCLER-FO)  
Agency/Company: USACE Louisville  
Address: 600 DE MARTIN WITHER KING JR PARK  
LOUISVILLE KY 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color    Odor    Staining    Texture    Sorting    Plasticity    Moisture

Water sample description should include:

Color    Odor    Sheen    Turbidity

Logged By: Michael Samofal (Please Print)Reviewed by: ERIC FUS (Please Print)Signature: Michael SamofalSignature: Eric Fus Date: 2/3/05

# Field Sampling Report

Location ID: LL555-011M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12-Nov-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 12/0 hrs

Sample Type: Composite - MI Grab

Location: Plotted on Map ~~Staked in Field~~  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

## Field Parameters (at time of sample)

## Analytical Parameters

## Other Parameters

### PID / FID Readings:

Background:

0.0 ppm

Sample:

0.0 ppm

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Propellants

Nitrate

Water Level

FT

TAL Metals

## QA Samples

Temperature

°C

Pesticides/PCBs

MS/MSD

Yes / No

NA

Sp. Conductance:

uMHOs

Cyanides

Duplicate ID

NA

pH

units

TOC

Equipment Rinse ID

NA

Turbidity

N.T.U.

Grain Size

Trip Blank ID

NA

## Sample Description

No Odor, Some Gravel grey mottles  
10 YR 3/6, moist, sorted  
low plasticity, silt 65%,  
clay 20%,  
sand 15%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samsel (Please Print)

Reviewed by: FRU EWS (Please Print)

Signature: Michael Samsel

Signature: FRU EWS Date: 2/3/05

Location ID: LL555-012M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1025 hrsSample Type: Composite MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC <u>✓</u>	Reactivity Sulfide/Cyanide
	Explosives <u>✓</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants <u>✓</u>	
	Nitrate <u>✓</u>	
Water Level <u>✓</u> FT	TAL Metals <u>✓</u>	QA Samples
Temperature <u>✓</u> °C	Pesticides/PCBs <u>✓</u>	MS/MSD Yes / No NA
Sp. Conductance: <u>✓</u> uMHOs	Cyanides	Duplicate ID NA
pH <u>✓</u> units	TOC	Equipment Rinse ID NA
Turbidity <u>✓</u> N.T.U.	Grain Size	Trip Blank ID NA

## Sample Description

No Odor, Some Orange Mottles  
104R 3/4 moist; poorly sorted  
non plastic silt 70% clay 15%  
sand 15%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samuels (Please Print)Reviewed by: ERIC LEWIS (Please Print)Signature: Michael SamuelsSignature: ERIC LEWIS Date: 2/3/05

Location ID: LL555-012D-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 1025 hrsSample Type: Composite MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	<input checked="" type="checkbox"/>	TPH GRO	Corrosivity		
	SVOC		TPH DRO	Reactivity Sulfide/Cyanide		
	Explosives		Chromium +6	Ignitability		
Sample: <u>0.0</u> ppm	Propellants		Nitrate			
Water Level	TAL Metals			QA Samples		
Temperature	Pesticides/PCBs			MS/MSD	Yes / No	NA
Sp. Conductance:	Cyanides			Duplicate ID		NA
pH	TOC			Equipment Rinse ID		NA
Turbidity	Grain Size			Trip Blank ID		NA

## 11/15/04 Sample Description

No odor, no some orange mottlesSame as 012 m-18

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)Reviewed by: ERIC EWIS (Please Print)Signature: Michael SamelakSignature: Eric Ewis Date: 2/3/05

Location ID: LL558-013M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/15/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1100 hrsSample Type: Composite MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <input checked="" type="checkbox"/>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	Nitrate <input checked="" type="checkbox"/>
Water Level <u>    </u> FT	TAL Metals <input checked="" type="checkbox"/>	QA Samples
Temperature <u>    </u> °C	Pesticides/PCBs	MS/MSD Yes / No NA
Sp. Conductance: <u>    </u> uMHOs	Cyanides	Duplicate ID NA
pH <u>    </u> units	TOC	Equipment Rinse ID NA
Turbidity <u>    </u> N.T.U.	Grain Size	Trip Blank ID NA

## Sample Description

No Odor, No Staining  
10yR 3/2, moist, poorly sorted  
non plastic,  
silt 60%  
sand 10%  
clay 30%

## Split Sample

Split Sample ID:     Name:     Agency/Company:     Address:     QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)Reviewed by: ERIC EUS

(Please Print)

Signature: Michael SamelakSignature: Eric EusDate: 2/3/05

Location ID: 42555-014M-S0

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11-15-04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 155 hrsSample Type: Composite - MI - Grab 30  
If MI, # of increments taken:Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	TPH GRO	
	TPH DRO	
	Chromium +6	
	Nitrate	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

No odor, no staining  
104R 3/3, moist, sorted,  
non plastic, SIF 60', clay 20',  
sand 20'

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Stephen Sturgeon (Please Print)Signature: S SturgeonReviewed by: ERIC ELUIS (Please Print)Signature: SELL Date: 2/3/05

Location ID: LL555-015M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1535 hrsSample Type: Composite MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives <input checked="" type="checkbox"/>	Chromium +6
Sample: <u>0.0</u> ppm	Propellants	
Water Level <u>0.0</u> FT	TAL Metals <input checked="" type="checkbox"/>	
Temperature <u>0.0</u> °C	Pesticides/PCBs	
Sp. Conductance: <u>0.0</u> uMHOs	Cyanides	
pH <u>0.0</u> units	TOC	
Turbidity <u>0.0</u> N.T.U.	Grain Size	

## Sample Description

No Odor, No staining  
10YR 3/4, moist, poorly sorted  
non plastic, silt 65%  
sand 32%  
clay 5%

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As ListedLogged By: Michael Synelak (Please Print)Signature: Michael SynelakReviewed by: ERIC ELMS (Please Print)Signature: Eric Elms Date: 2/3/05

# Field Sampling Report

Location ID: LL555-016M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/15/04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1440 hrs

Sample Type: Composite (MI) - Grab  
If MI, # of increments taken: 30

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	✓	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	✓				
Water Level	FT	TAL Metals	✓					
Temperature	°C	Pesticides/PCBs						
Sp. Conductance:	uMHOs	Cyanides						
pH	units	TOC						
Turbidity	N.T.U.	Grain Size						
					QA Samples			
					MS/MSD	Yes / No	NA	
					Duplicate ID	NA		
					Equipment Rinse ID	NA		
					Trip Blank ID	NA		

## Sample Description

No Odor, Some orange staining  
104R 4/6, moist, sorted  
Non plasticity silt 60%  
clay 30%  
sand 10%

## Split Sample

Split Sample ID:

Name:  
Agency/Company:  
Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Prepared By: Michael Samalake (Please Print)

Reviewed by: ERIC ELLIS (Please Print)

Signature: Michael Samalake

Signature: ERIC ELLIS

Date: 2/3/05

Location ID: LL555-016M-QA

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/15/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1410 hrsSample Type: Composite - MI - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Chromium +6
Sample: 0.0 ppm	Propellants	Ignitability
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	
Sp. Conductance:	Cyanides	
pH	TOC	
Turbidity	Grain Size	

## Sample Description

No odor, some orange staining  
104R 4/16, moist, sorted  
None plasticity, silt 60  
clay 30  
sand 10.

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samplak (Please Print)Reviewed by: ERIC BLIS (Please Print)Signature: Michael SamplakSignature: Eric Blis Date: 2/3/05

Location ID: LL555-017M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/15/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge		
Method	Bailer	Sample Bottle	Scoop	Trowel	X
	Pump	Bacon Bomb	Bowl	Hand Auger	
			Push Probe	Plastic Liner	X
Type/Construction			Mattocks		
Miscellaneous	Well Purging Form Yes - No				

Sample Collection: 1435 hrs Sample Type: Composite - MI Grab  
If MI, # of increments taken: 30 Location: Plotted on Map - Staked in Field  
Sample Depth: 0-1 FT (below surface) Decon: Dedicated - Each Day - Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters		
PID / FID Readings:	VOC	Corrosivity		
Background: ppm	SVOC	Reactivity Sulfide/Cyanide		
	Explosives	Ignitability		
Sample: ppm	Propellants			
	TAL Metals			
Water Level	Pesticides/PCBs	QA Samples		
Temperature	Cyanides	MS/MSD	Yes / No	NA
Sp. Conductance:	TOC	Duplicate ID		NA
pH	Grain Size	Equipment Rinse ID		NA
Turbidity		Trip Blank ID		NA

## Sample Description

No odor, no staining  
10yR 3/3, moist, sorted  
non plastic, silt 70%  
clay 20%  
sand 10%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Kanorzo (Please Print)Reviewed by: FRIGELUS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/3/05

# Field Sampling Report

Location ID: LL555 - 018M - 50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/19/04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	
	Pump		Bacon Bomb		Bowl	
Type/Construction					Push Probe	✓ Plastic Liner ✓
					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1509 hrs      Sample Type: Composite - MI - Grab      Location: Plotted on Map - Staked in Field  
 If MI, # of increments taken: 30  
 Sample Depth: 0-1 FT (below surface)      Decon: Dedicated - Each Day Each Location  
 Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings:	VOC	✓	TPH GRO	Corrosivity		
Background: <u>NT</u> ppm	SVOC	✓	TPH DRO	Reactivity Sulfide/Cyanide		
	Explosives	✓	Chromium +6	Ignitability		
Sample: <u>NT</u> ppm	Propellants	✓	Nitrate	✓		
Water Level: <u>NT</u> FT	TAL Metals	✓		QA Samples		
Temperature: <u>NT</u> °C	Pesticides/PCBs	✓		MS/MSD	Yes / No	NA
Sp. Conductance: <u>NT</u> uMHOs	Cyanides			Duplicate ID		NA
pH: <u>NT</u> units	TOC	✓		Equipment Rinse ID		NA
Turbidity: <u>NT</u> N.T.U.	Grain Size			Trip Blank ID		NA

## Sample Description

No Odor, No Staining  
10YR 3/4 MED PLASTICITY SORTED MOIST  
SILTY CLAY w/TRACE SAND

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: NILESH SHRINGARPURE (Please Print)

Reviewed by: ERIC ELIS (Please Print)

Signature: NShringarpure

Signature: SLSH Date: 2/3/05

# Field Sampling Report

Location ID: LL553-018D-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/19/04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1500 hrs

Sample Type: Composite - MI Grab  
If MI, # of increments taken:

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters			Other Parameters		
PID / FID Readings: Background: ppm	VOC	✓	TPH GRO	Corrosivity		
	SVOC		TPH DRO	Reactivity Sulfide/Cyanide		
	Explosives		Chromium +6	Ignitability		
Sample: ppm	Propellants		Nitrate			
Water Level: FT	TAL Metals			QA Samples		
Temperature: °C	Pesticides/PCBs			MS/MSD	Yes / No	NA
Sp. Conductance: uMHOs	Cyanides			Duplicate ID		NA
pH: units	TOC			Equipment Rinse ID		NA
Turbidity: N.T.U.	Grain Size			Trip Blank ID		NA

### Sample Description

No Odor, No Staining

SAME AS LL553-018M-50

### Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC ELUIS (Please Print)

Signature: Michael Samelak

Signature: [Signature] Date: 2/3/05

Location ID: LL555-00191-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 12 Nov 04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	
	Pump		Bacon Bomb		Bowl	
					Push Probe	X
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 11 hrsSample Type: Composite MI Grab 30  
If MI, # of increments taken:Location: Plotted on Map & Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	X	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	X				
Water Level	FT	TAL Metals	X		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	Yes / No	NA	
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

10YR 2/2  
NO odor, some staining, moist  
well sorted, low plasticity  
silt 60% clay 35%, sand 5%

## Split Sample

Split Sample ID: \_\_\_\_\_

Name: \_\_\_\_\_

Agency/Company: \_\_\_\_\_

Address: \_\_\_\_\_

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Shellyam Tiberius (Please Print)Reviewed by: ERIC ELLIS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/3/05

Location ID: LL555-020M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 15 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1350 hrsSample Type: Composite - MI Grab  
If MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings: Background: <u>0.0</u> ppm	VOC	Corrosivity
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
Water Level	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
Sp. Conductance:	Cyanides	Duplicate ID
pH	TOC	Equipment Rinse ID
Turbidity	Grain Size	Trip Blank ID

## Sample Description

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Panozzo (Please Print)Reviewed by: ERIC ELLIS (Please Print)Signature: [Signature]Signature: [Signature]Date: 2/3/05

# Field Sampling Report

Location ID: LL500-021M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 11/19/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1550 hrs      Sample Type: Composite - MI - Grab      Location: Plotted on Map - Staked in Field  
 Sample Depth: 0-1 FT (below surface)      If MI, # of increments taken: 30      Estimated - Measured - Surveyed  
 Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	TPH GRO	
	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: <u>0.4</u> ppm	Chromium +6	
	Propellants	
Water Level	Nitrate	
FT	TAL Metals	QA Samples
Temperature	Pesticides/PCBs	MS/MSD
°C		Yes / No <u>NA</u>
Sp. Conductance:	Cyanides	Duplicate ID
uMHOs		<u>LL500-021M-DUP NA</u>
pH	TOC	Equipment Rinse ID
units		<u>NA</u>
Turbidity	Grain Size	Trip Blank ID
N.T.U.		<u>NA</u>

## Sample Description

NO ODOR NO STAINING

LOW TO  
10YR 4/6 MED PLASTICITY WELL SORTED MOIST  
SILTY CLAY W/ SAND

Split Sample ID: LL500-021M-50  
 Name: JOHN JENI (CERU-021M)  
 Agency/Company: USACE Louisville  
 Address: 600 DR MARTIN LUTHER KING JR BLVD  
LOUISVILLE, KY 40202

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
 Parameters: Same as Above As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: NILESH SHRINGARPURE (Please Print)

Reviewed by: ERIC FUS (Please Print)

Signature: N. Shringarpure

Signature: SR Date: 2/3/05

Location ID: LL555-022M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 12 Nov 04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 0930 hrsSample Type: Composite MI GrabIf MI, # of increments taken: 30Location: Plotted on Map Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives	Ignitability
Sample: ppm	Propellants	
	TAL Metals	
Water Level	Pesticides/PCBs	QA Samples
Temperature	Cyanides	MS/MSD
Sp. Conductance:	TOC	Duplicate ID
pH	Grain Size	Equipment Rinse ID
Turbidity		Trip Blank ID

## Sample Description

Slight organic odor, No staining  
104R 3/3, moist, med plasticity  
well sorted silt 60%  
clay 35%  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: Michael SamelakSignature: ERIC EWS Date: 2/3/05

Location ID: LL555-023M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/15/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1405 hrs Sample Type: Composite MI - Grab 30  
If MI, # of increments taken: 30 Location: Plotted on Map - Staked in Field  
Sample Depth: 0-1 FT (below surface) Decon: Dedicated - Each Day Each Location  
Estimated - Measured - Surveyed

Field Parameters (at time of sample)	Analytical Parameters	Other Parameters
PID / FID Readings:	VOC	Corrosivity
Background: <u>0.0</u> ppm	SVOC	Reactivity Sulfide/Cyanide
	Explosives <u>X</u>	Ignitability
Sample: <u>0.0</u> ppm	Propellants	
	Nitrate <u>X</u>	
Water Level	TAL Metals <u>X</u>	QA Samples
Temperature	Pesticides/PCBs	MS/MSD Yes / No NA
Sp. Conductance:	Cyanides	Duplicate ID NA
pH	TOC	Equipment Rinse ID NA
Turbidity	Grain Size	Trip Blank ID NA

## Sample Description

No odor, no staining  
10yR 3/4, moist, sorted  
low plasticity  
silt 65%,  
clay 30%,  
sand 5%

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: James Lanzetta (Please Print)Reviewed by: ERIC EWS (Please Print)Signature: [Signature]Signature: [Signature] Date: 2/3/05

# Field Sampling Report

Location ID: LL555-024M-50

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12 Nov 04

## Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge	
Method	Bailer		Sample Bottle		Scoop	Trowel
	Pump		Bacon Bomb		Bowl	Hand Auger
					Push Probe	Plastic Liner
Type/Construction					Mattocks	
Miscellaneous	Well Purging Form Yes - No					

Sample Collection: 1045 hrs

Sample Type: Composite MI Grab  
If MI, # of increments taken: 30

Location: Plotted on Map Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<input checked="" type="checkbox"/>	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	<input checked="" type="checkbox"/>				
Water Level <u>/</u> FT	TAL Metals	<input checked="" type="checkbox"/>			QA Samples			
Temperature <u>/</u> °C	Pesticides/PCBs				MS/MSD	Yes / No	NA	
Sp. Conductance: <u>/</u> uMHOs	Cyanides				Duplicate ID		NA	
pH <u>/</u> units	TOC				Equipment Rinse ID		NA	
Turbidity <u>/</u> N.T.U.	Grain Size				Trip Blank ID		NA	

### Sample Description

No Odor, some grey staining  
10yrR 4/6 moist - high plasticity  
well sorted silt 60%  
clay 40%

### Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC ELIS (Please Print)

Signature: Michael Samelak

Signature: ERIC ELIS Date: 2/3/05

Location ID: LL555-022M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCs

Date: 12 Nov 04

### Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge	
Method	Bailer	Sample Bottle	Scoop	Trowel
	Pump	Bacon Bomb	Bowl	Hand Auger
			Push Probe	Plastic Liner
Type/Construction			Mattocks	
Miscellaneous	Well Purging Form Yes - No			

Sample Collection: 0955 hrs

Sample Type: Composite - MI - Grab

Location: Plotted on Map - Staked in Field  
Estimated - Measured - Surveyed

Sample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day Each Location

### Field Parameters (at time of sample)

### Analytical Parameters

### Other Parameters

#### PID / FID Readings:

Background:

0.0 ppm

Sample:

0.0 ppm

VOC

TPH GRO

Corrosivity

SVOC

TPH DRO

Reactivity Sulfide/Cyanide

Explosives

Chromium +6

Ignitability

Propellants

Nitrate

Water Level

FT

TAL Metals

### QA Samples

Temperature

°C

Pesticides/PCBs

MS/MSD

Yes / No

NA

Sp. Conductance:

uMHOs

Cyanides

Duplicate ID

NA

pH

units

TOC

Equipment Rinse ID

NA

Turbidity

N.T.U.

Grain Size

Trip Blank ID

NA

### Sample Description

No odor, some grey mottling

104R 3/2 moist, sorted

low plasticity, silt 70%

clay 25%

sand 5%

### Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Logged By: Michael Samelak (Please Print)

Reviewed by: ERIC PUS (Please Print)

Signature: Michael Samelak

Signature: ERIC PUS Date: 2/3/05

Location ID: LL555-026M-50

## Field Sampling Report

Ravenna Army Ammunition Plant  
Characterization of 14 RVAAP AOCsDate: 11/15/04

## Sampling Information

Source	Groundwater / Product	Surface Water	Soils / Sediments / Sludge
Method	Bailer	Sample Bottle	Scoop
	Pump	Bacon Bomb	Bowl
			Push Probe <u>SS</u>
Type/Construction			Mattocks
Miscellaneous	Well Purging Form Yes - No		

Sample Collection: 1510 hrsSample Type: Composite MI - GrabIf MI, # of increments taken: 30Location: Plotted on Map - Staked in Field  
Estimated - Measured - SurveyedSample Depth: 0-1 FT (below surface)

Decon: Dedicated - Each Day - Each Location

Field Parameters (at time of sample)	Analytical Parameters				Other Parameters			
PID / FID Readings: Background: <u>0.0</u> ppm	VOC		TPH GRO		Corrosivity			
	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	Explosives	<u>X</u>	Chromium +6		Ignitability			
Sample: <u>0.0</u> ppm	Propellants		Nitrate	<u>X</u>				
Water Level	FT	TAL Metals	<u>X</u>		QA Samples			
Temperature	°C	Pesticides/PCBs			MS/MSD	<u>Yes</u> <u>No</u>	NA	
Sp. Conductance:	uMHOs	Cyanides			Duplicate ID		NA	
pH	units	TOC			Equipment Rinse ID		NA	
Turbidity	N.T.U.	Grain Size			Trip Blank ID		NA	

## Sample Description

No odor, no staining  
10 y R c/c, moist, poorly sorted  
non plastic  
silt 65%  
sand 30%  
clay 5%

Field QA associated with this sample.

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

## Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks  
Parameters: Same as Above - As ListedLogged By: James Kanoro (Please Print)Reviewed by: ERIC FUIS (Please Print)Signature: James KanoroSignature: Eric Fuis Date: 2/3/05